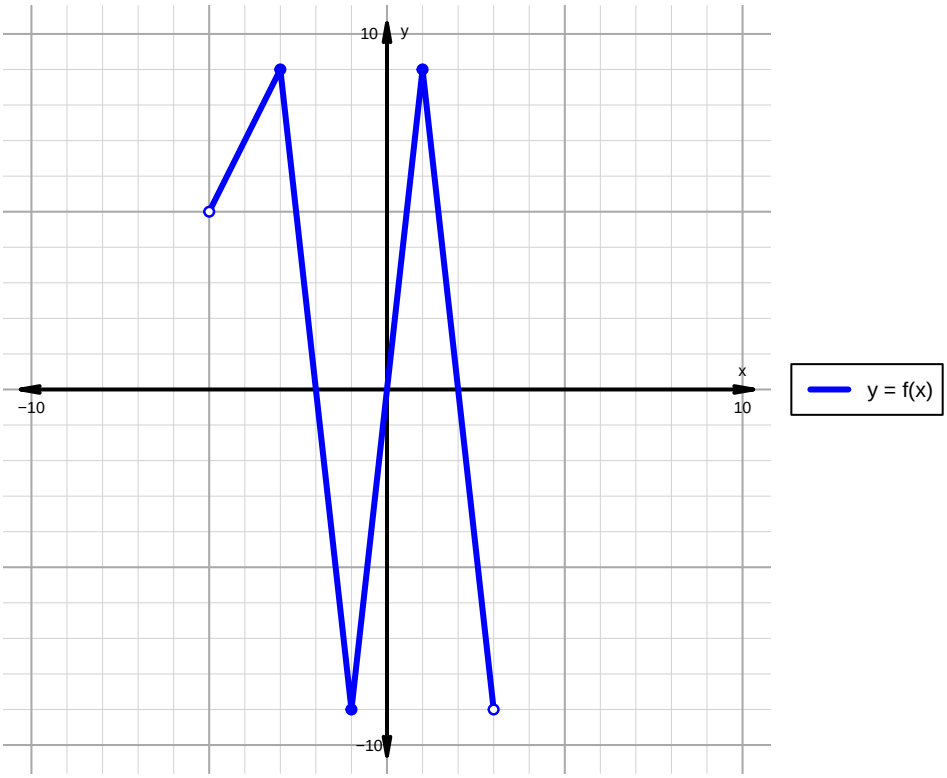
Name: Date:

Intervals, Transformations, and Slope Solution (version 10)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-5,-2)\cup(0,2)$
Negative	$(-2,0)\cup(2,3)$
Increasing	$(-5,-3)\cup(-1,1)$
Decreasing	$(-3,-1)\cup(1,3)$
Domain	$(-5,3)$
Range	$(-9,9)$

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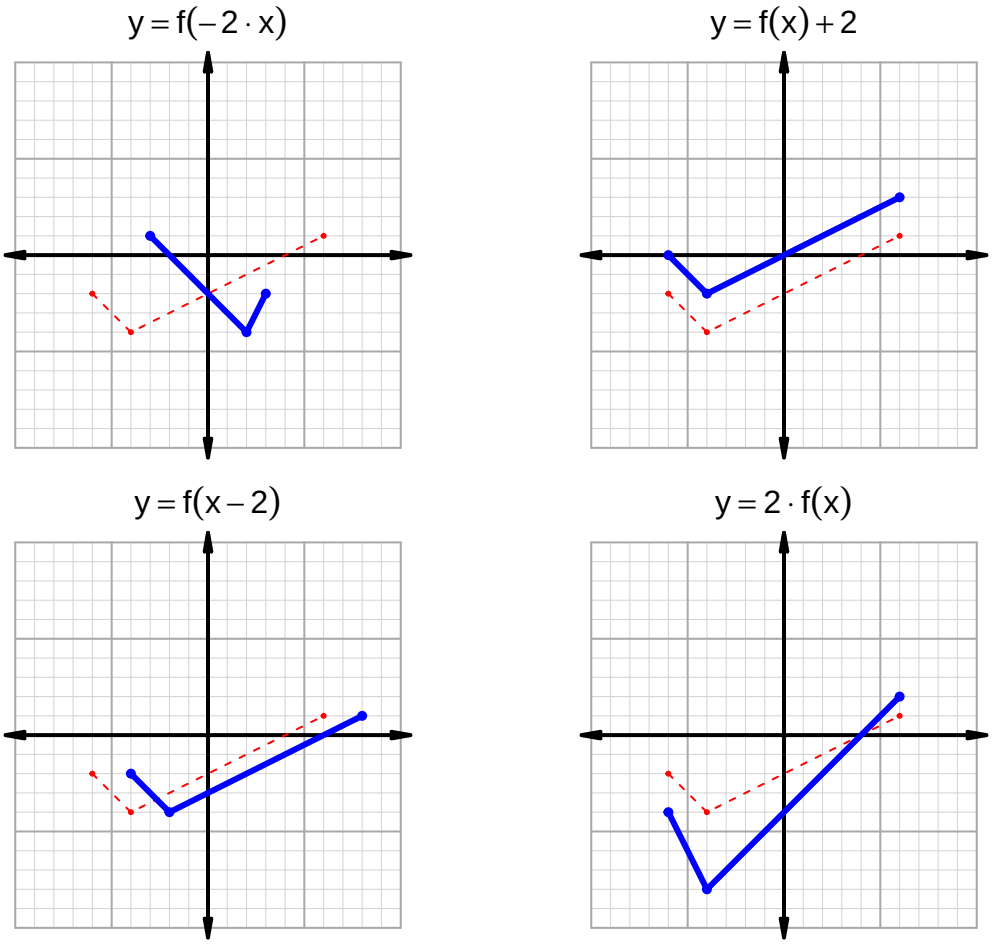
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 27$ and $x_2 = 57$. Express your answer as a reduced fraction.

x	$g(x)$
17	57
27	17
35	27
57	35

$\frac{g(57)-g(27)}{57-27} = \frac{35-17}{57-27} = \frac{18}{30}$

The greatest common factor of 18 and 30 is 6. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{3}{5}$$